IN THE CLAIMS

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double-bracketed text indicating deletions.

Listing of the Claims:

1. (Original) A light illuminating device comprising: a. at least one light emitting diode (LED), b. at least one thermoelectric module (TEM) having a first surface which is thermally connected to the LED, c. a heat sink thermally connected to a second surface of the at least one TEM, d. a thermally insulating cover creating an enclosed chamber substantially insulating the LED from ambient air.

2. (Original) The device of claim 1, wherein the at least one TEM is configured such that the device is operated by running a TEM-operating current (TOC) through the TEM, which current is less than 20% of the maximum operating current for the TEM, thereby preventing a decrease in light output due to an increase of the temperature of the LED(s).

3. (Original) The device of claim 2, wherein the at least one TEM is configured such that the device is operated by running a TOC through the TEM, which current is less than 15% of the maximum operating current for the TEM.

4. (Original) The device of claim 1, wherein the TEM Is configured such that the operating temperature of the LED(s) is lower than or about the same as the ambient temperature surrounding the device.

5. (Original) The device of claim 1, wherein the TOC for each of said at least one TEM is in the range of 200-600 mA.

6. (Original) The device of claim 5, wherein the TOC for each of said at least one TEM is in the range of 250-500 mA.

7. (Original) The device of claim 1, wherein the TEM has a coefficient of performance (COP) during normal operation in the range of about 2-6.

8. (Original) The device of claim 1, which device is configured such that the device produces more illumination per unit consumed power when the TOC is applied to the TEM, than the illumination produced per unit consumed power when no TOC is applied to the TEM.

9. (Original) The device of claim 1, comprising a plurality of LEDs.

10. (Original) The device of claim 1, comprising a plurality of TEMS.

11. (Original) The device of claim 1, comprising a plurality of TEMs thermally connected in a stacked fashion.

12. (Original) The device of claim 1, wherein the enclosed chamber has a higher pressure than ambient pressure during normal operation.

13. (Original) The device of claim 1, wherein the enclosed chamber has a lower pressure than ambient pressure, during normal operation.

14. (Original) The device of claim 1, further comprising a control unit for controlling the TOC, and one or more sensors connected to the control unit for sensing one or more environmental parameters, wherein the control unit is configured to adjust the TOC based on parameters measured by the one or more sensors.

15. (Original) The device of claim 14, wherein said one or more sensors comprise a temperature sensor for measuring the in situ temperature surrounding the LED(s).

16. (Original) The device of claim 14, wherein said one or more sensors comprise a sensor for measuring emitted light from the LED(s)

17. (Original) The device of claim 14, which is operated with pulsed current to the one or more LEDs.

18. (Original) The device of claim 1 which device is configured for an application selected from traffic light, illuminated roadway and/or emergency signs, airport runway lights, vehicle lights Including brake lights.

19. (Original) A light illuminating device comprising at least one light emitting diode (LED) and at least one thermoelectric module (TEM) thermally connected to the LED, and a heat sink; wherein the at least one TEM is selected and configured such that by running a TEM-operating current (TOC) through the TEM, the thermal power produced by the at least one LED is transferred through the at least one TEM to the heat sink, thereby maintaining or lowering the temperature surrounding the LED and enhancing the light output from the LED; the device thus consuming less overall power per amount of emitted light when the TEM is running as compared to the overall power per same amount of light when the device is operated without running an operating current through the TEM.

20. (Original) A method for enhancing the efficiency of an light illuminating device having one or more LEDs as a light source, comprising: a. providing the device with one or more thermoelectric module(s) (TEM) having a cold surface and a hot surface, such that the cold surface is thermally connected to the LED and the hot surface is thermally connected to a heat sink, b. applying a TEM-operating current (TOC) to the one or more TEMs to create a temperature gradient through the TEM, c. adjusting the TOC such that substantially all of the thermal energy created by the LED(s) when operated is transferred to the heat sink, thereby substantially maintaining the operating temperature

of the LED(s) at ambient temperature or a lower temperature, d. wherein the TEM is configured and TOC adjusted such that the device consumes less overall power per amount of emitted light when the TEM is running as compared to the overall power per same amount of light when the device is operated without applying a TOC to the TEM.

21. (Original) The method of claim 20, wherein the TOC is less than 20% of the maximum operating current for the one or more TEMs.

22. (Original) The method of claim 20, wherein the TOC is less than 15% of the maximum operating current for the one or more TEMs.

23. (Original) The method of claim 20, wherein the TOC for each of said at least one TEM is in the range of 200-600 mA.

24. (Original) The method of claim 20, wherein the TOC for each of said at least one TEM is in the range of 250-500 mA.